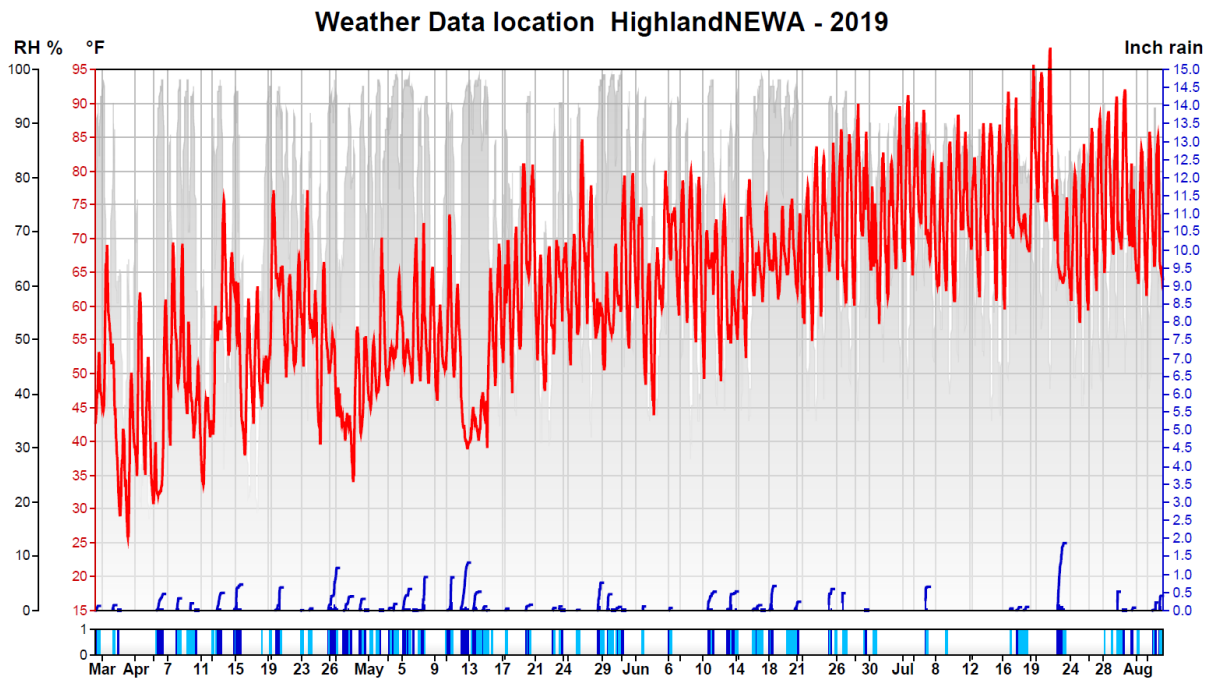


Apple Disease Status in Hudson Valley of New York - Hudson Valley Research Laboratory

Srdjan Acimovic (Cornell University, Plant Pathology & Plant-Microbe Biology Section)

Rainfall accumulations, temperatures, and humidity for:



Apple scab had 8 major infection periods based on the RIMpro apple scab prediction model (from PK to PF, Figure 1 below). Before the first major infection on the 26 April at PK bud stage, three ascospore germination periods did not lead to significant infections that would warrant fungicide application/s in commercial orchards which did not have scab onset last year since conditions after rainfall were cold and unfavorable for germinating spores to establish an infection. Using the vacuum scab tower trap, we found first mature ascospores in leaf litter on 28 March in Highland, NY, on 17 April in Rexford, and on 18 April in Peru, NY. On 4 June in Hudson Valley and on 21 June in Champlain Lake Valley, all ascospores were discharged from pseudothecia according to RIMpro's maturation model. In Highland we found the first apple leaf scab symptoms on 10 May in untreated control plot with 'Jersey Mac' trees in Highland and on 16 May on 'Honeycrisp' leaves in one commercial orchard in Wallkill. These infections were probably initiated on the first major scab infection periods of 26 April (Highland) and on 12 April (commercial orchard), respectively.

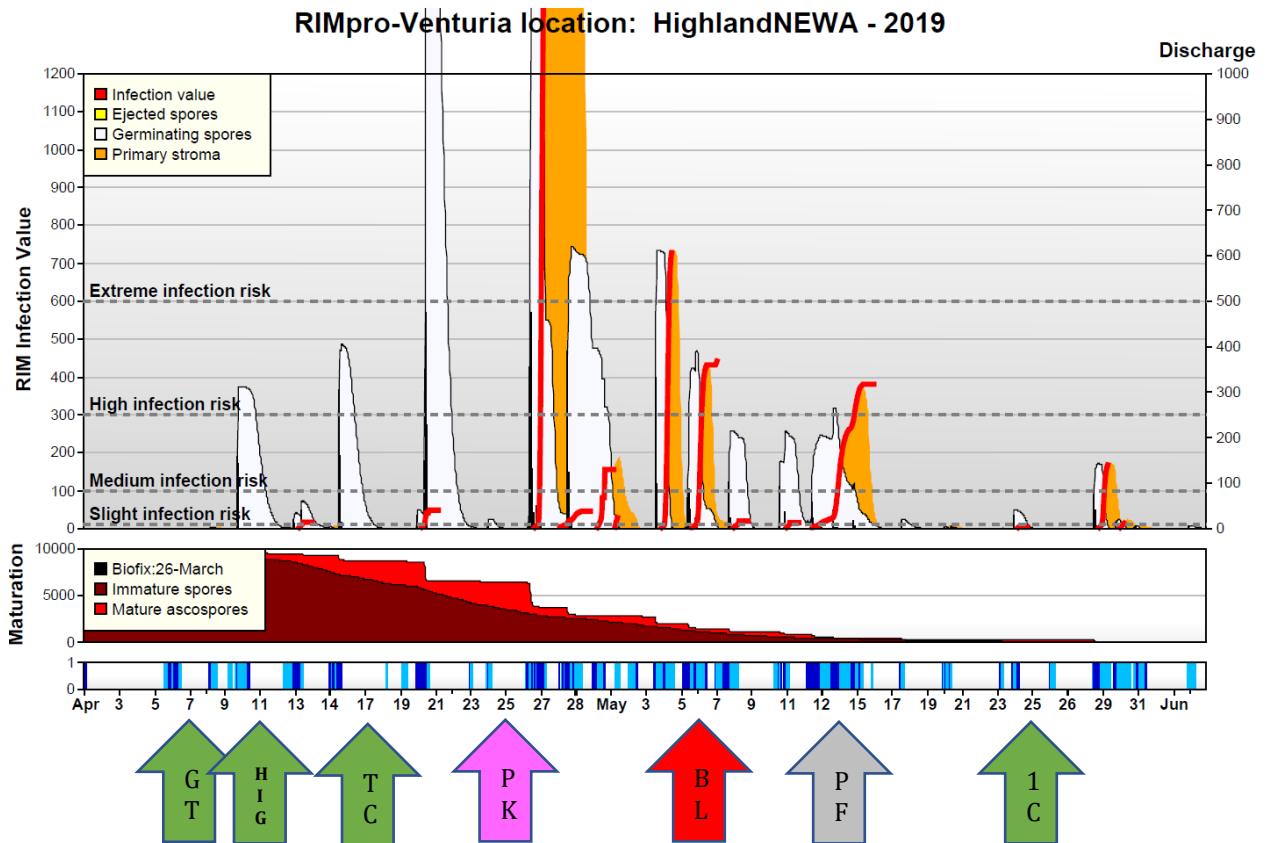
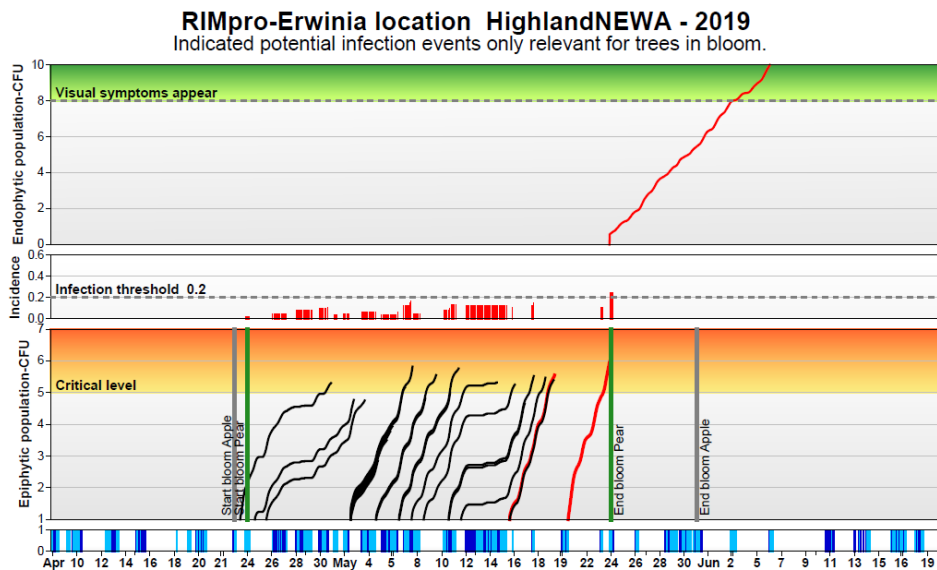


Figure 1. Actual (historical) RIMpro apple scab infection periods in 2019 for Highland NY. (A) White camel hump-like areas labelled “Germinating spores” designate cumulative number of *Venturia inaequalis* ascospores that germinate over time and are read using the right-side vertical Y-axis scale that is labelled “Discharge”. (B) Small black bars, right at the beginning of white humps, which are seen better by using the zoom-in tool on the RIMpro screen, show the number of spores ejected from leaf litter in the orchard during each one-hour interval. (C) The red curved line is the RIM infection value which, when divided by 100, is roughly the percentage of the total season’s ascospores that are likely to cause infection in any given infection period. Read each curve’s peak RIM infection value/s using the vertical Y-axis scale on the left-hand side of the graph labelled “RIM Infection Value”. (D) Orange area called “Primary stroma” represents scab lesions that were initiated by infection from germinating spores and that are incubating in the leaf and which indicates the time during which kick-back fungicides can be applied. Incubating infections are worth noting because, if no fungicide was in place before the infection event began, some or all of the incubating infections can still be eliminated by using fungicides with post-infection activity. (E) The light red area in the middle “Maturation” graph is the proportion of mature ascospores that are ready for discharge with wetting events whereas the dark red area (E) shows the proportion of immature ascospores remaining in leaf litter. (F) The dark blue bars in the wetting graph with dates, at the bottom, are the actual rain periods. (G) The light blue bars next to dark blue bars are actual wetting periods when no rain is falling but trees continue to be wet after rain. Image used by permission of RIMpro B.V., Netherlands. <https://www.rimpro.eu/>

Cedar apple rust and quince rust symptoms in Highland NY started showing on apple leaves from 6 May onward. Infection periods for rust were prolonged since there was a lot of rain.

Fire blight conditions in Hudson Valley were favorable at petal fall with EIP in NEWA’s model going over 100 on 19, 20, 23 and 26 May and 1, 2 June. In Champlain Lake Valley first infection periods were on 8, 9, 10 and 12 June. First flowers in Highland on early cultivars opened on 24 April and on 18 May in Peru. Several streptomycin applications were needed in orchards with fire blight history. Warm and rainy conditions during the end of bloom favored growth of fire blight populations on flowers. In commercial apple trees in Hudson Valley, we heard of first fire blight symptoms occurrence in early to mid-June 2019. An unprecedented number of growers in late May in East NY reported *Nectria* Twig Blight which was often misdiagnosed as fire blight (Figure 2).



NEWA Apple Disease Models

Select a disease:
Fire Blight

State:
New York

Weather station:
Highland HVL 2

Date of Interest:
05/21/2019

[Calculate](#)

Fire Blight Risk Predictions for Highland HVL 2

Orchard Blight History: Fire blight occurred in your neighborhood last year.

First blossom open date: 4/23/2019 [Click if bloom has not occurred](#)

The first blossom open date above is estimated based on degree day accumulations. Enter the actual first blossom open date for your orchard block of interest and the tool will calculate the protection period during bloom more accurately.

Accumulated degree days (base 43°F) through 5/21/2019: 653 (0 days missing)

	Past	Past	Current	Ensuing 5 Days				
Date	5/19	5/20	5/21	5/22	5/23	5/24	5/25	5/26
Cougarblight 4-Day DH	High 445	Extreme 714	Extreme 690	Extreme 670	High 473	Caution 235	Caution 274	High 499
Infection Potential EIP value	Infection 108	Infection 180	Moderate 160	Low 92	Infection 107	High 38	High 49	Infection 123
Wetness Events								
Rain Amount	0.10	0.05	0.00	0.00	0.18	0.01	0.00	0.02
Dew	No	Yes	No	No	Yes	Yes	Yes	Yes
Leaf Wetness (hours)	2	11	0	0	8	3	0	8
Hours >90% RH	1	10	0	0	3	5	1	5
RH max/min	92/54	96/44	62/31	72/31	93/53	94/54	91/57	94/42
Temp avg F	67	72	59	58	61	63	60	70

NA - data not available [View Cougarblight Charts](#) Download Time: 5/27/2019 23:00



Figure 2. *Nectria* twig blight caused on apple shoot by a fungus *Nectria cinnabarina* (©Photo by Aćimović S. G. 2019).

SBFS - Sooty Blotch & Flyspeck in Hudson Valley were first found on 22 July 2019 on untreated 'Honeycrisp' and 'Ginger Gold' fruit in Walden NY.

Bitter Rot. We found first natural symptoms of bitter rot on 22 July on Honeycrisp fruit in Walden NY.

Marssonina Leaf Spot on apple. Again, as in 2017 and 2018, in more than several locations in lower-Hudson Valley and in southern NY, first typical symptoms of MLB were observed on 19-22 July 2019 on leaves of Cortland, Jersey Mac, Mutsu, Rome, Jonathan and Gala.



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